

# DNA Analyst Training Laboratory Training Manual

Form: Demonstration of Competency

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PRESIDENT'S  
**DNA**  
INITIATIVE



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### *Subject 1: Evidence and DNA*

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 01: Evidence & DNA	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 1: Evidence		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 1: DNA		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully perform exercises from Laboratory Training Manual Subject 1: Evidence		
	Exercise 1: Examination, Sample Collection, and Documentation		

# Demonstration of Competency

## Subject 2: Forensic Biology

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 02: Forensic Biology	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 2: Laboratory Orientation		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 2: Testing of Body Fluids and Tissues		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully perform exercises from Laboratory Training Manual Subject 2: Laboratory Orientation		
	Exercise 1: Safety		
	Exercise 2: Clean Technique		
	Exercise 3: Laboratory Equipment		
	Exercise 4: Reagent Preparation		
	<b>Objective 3:</b> Successfully perform exercises from Laboratory Training Manual Subject 2: Body Fluids		
	Exercise 5: Blood		
	Exercise 6: Semen		
	Exercise 7: Saliva		
	Exercise 8: Urine		
	Exercise 9: Fecal Material		
	Exercise 10: Vaginal Secretions		
	Exercise 11: Case Processing		
	Optional Exercise 12: Hair		

# Demonstration of Competency

## Subject 3: DNA Extraction and Quantitation

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 03: DNA Extraction and Quantitation	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 3: DNA Analysis Considerations		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 3: Organic Extraction		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully complete content review for Subject 3: Chelex® 100 Extraction		
	Read knowledge base content		
	<b>Objective 4:</b> Successfully complete content review for Subject 3: Other Extraction Techniques		
	Read knowledge base content		
	<b>Objective 5:</b> Successfully complete content review for Subject 3: Quantitation		
	Read knowledge base content		
	<b>Objective 6:</b> Successfully perform exercises from Laboratory Training Manual Subject 3: Extraction		
	Exercise 1: Extraction of Single Source Samples		
	Exercise 2: Differential Extraction of Mixed Samples		
	Exercise 3: Extraction of Compromised Samples		
	Exercise 4: Non-differential Extraction of Mixed Samples		
	Exercise 5: Extraction of Inhibited Samples		
	Exercise 6: Extraction of Hair and Tissue Samples		
	Exercise 7: Non-probative (Mock Case Samples)		

# Demonstration of Competency

## Subject 3: DNA Extraction and Quantitation

Subject 03: DNA Extraction and Quantitation (continued)	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	Optional Exercise 8: Extraction of Bone or Teeth		
	Optional Exercise 9: Commercial Extraction Reagents/Kits		
	<b>Objective 7:</b> Successfully perform exercises from Laboratory Training Manual Subject 3: Quantitation		
	Exercise 10: Sample Preparation and Instrumentation		
	Exercise 11: Reproducibility of the Quantitation Method		
	Exercise 12: Quantitation of Previously Extracted Samples		
	Exercise 13: Calculations and Dilutions		

# Demonstration of Competency

## Subject 4: DNA Amplification

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 04: DNA Amplification	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 4: Overview		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 4: Locus Selection		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully complete content review for Subject 4: Multiplexing		
	Read knowledge base content		
	<b>Objective 4:</b> Successfully complete content review for Subject 4: Contamination		
	Read knowledge base content		
	<b>Objective 5:</b> Successfully perform exercises from Laboratory Training Manual Subject 4: DNA Amplification		
	Exercise 1: Thermal Cyclers		
	Exercise 2: Amplification of Dilution Series		
	Exercise 3: Amplification of Two Donor Mixed Samples		
	Exercise 4: Amplification of Previously Extracted Samples		
	Optional Exercise 5: Effects of Annealing Temperature on Amplification		
	Optional Exercise 6: Effects of Increasing Extension Time on Amplification		
	Optional Exercise 7: Amplification of Degraded Samples		
	Optional Exercise 8: Amplification of Inhibited Samples		

# Demonstration of Competency

## Subject 5: Amplified DNA Product Separation

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 05: Amplified Product Separation	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 5: Overview		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 5: Capillary Electrophoresis		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully complete content review for Subject 5: Sample Preparation and Handling		
	Read knowledge base content		
	<b>Objective 4:</b> Successfully perform exercises from Laboratory Training Manual Subject 5: Amplified Product Separation		
	Exercise 1: Instrument Maintenance		
	Exercise 2: Sample Run and Set-up		
	Exercise 3: Initial Data Evaluation		
	Exercise 4: Practice Data Sets and Mock Cases		
	Optional Exercise 5: Variations in Sample Set-up for Troubleshooting		



# Demonstration of Competency

## Subject 6: STR Data Analysis and Interpretation

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 06: STR Data Analysis and Interpretation	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 6: STR Data Analysis & Interpretation		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 6: Data Troubleshooting		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully complete content review for Subject 6: Data Interpretation and Allele Calls		
	Read knowledge base content		
	<b>Objective 4:</b> Successfully perform exercises from Laboratory Training Manual Subject 6: DNA Amplification		
	Exercise 1: Analysis Parameters		
	Exercise 2: Practice Data		
	Exercise 3: Data Evaluation		
	Exercise 4: Data Interpretation		
	Exercise 5: Conclusions		

# Demonstration of Competency

## Subject 7: Population Genetics and Statistics

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 07: Population Genetics and Statistics	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 7: Population Theory		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 7: Statistics		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully perform exercises from Laboratory Training Manual Subject 7: Population Genetics and Statistics		
	Exercise 1: Statistical Calculations		

# Demonstration of Competency

## Subject 8: Communicating Results

Laboratory:	
Trainee Name:	Trainee Identification Number:
Technical Leader:	Location:

Subject 08: Communication Results	Learning Objectives by Subject	Technical Leader Approval	Completion Date
	<b>Objective 1:</b> Successfully complete content review for Subject 8: Communications Skills		
	Read knowledge base content		
	<b>Objective 2:</b> Successfully complete content review for Subject 8: Report Writing		
	Read knowledge base content		
	<b>Objective 3:</b> Successfully complete content review for Subject 8: Courtroom Testimony		
	Read knowledge base content		
	<b>Objective 4:</b> Successfully perform exercises from Laboratory Training Manual Subject 8: Communication Results		
	Exercise 1: Preparation of Case Reports from Provided Data		
	Exercise 2: Preparation of Case Reports from Exercise Samples and Mock Cases		
	Exercise 3: Overview of Judicial Practices and Policies		
	Exercise 4: Observation of Testimony		
	Exercise 5: Preparation of Curriculum Vitae		
	Exercise 6: Mock Trial		

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